Remarks

Reconsideration of this Application is respectfully requested.

Upon entry of the foregoing amendment, claims 1 and 3-6 are pending in the application, with 1 being the independent claim. Claim 2 is sought to be canceled without prejudice to or disclaimer of the subject matter therein. Support for the amendments to claims 1 and 3 is found in the specification at page 5, lines 2-3. These changes are believed to introduce no new matter, and their entry is respectfully requested.

Information Disclosure Statement

Applicants note that the Examiner has not indicated that he has considered the references cited on the Information Disclosure Statement filed July 12, 2005. Applicants request that an initialed Form PTO-1449 be returned to indicate that the references have been considered.

Rejections under 35 U.S.C. § 102

Claims 1-3 have been rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Mandecki (U.S. Patent No. 6,046,003). (Office Action, page 2). Applicants respectfully traverse this rejection.

The Examiner is of the opinion that:

> [r]egarding claim 1, Mandecki teaches a method for producing a labeled nucleic acid (e.g., fluorescently-labeled target DNA bound to probe attached to the surface of the transponder), wherein the method comprises binding the nucleic acid (e.g., oligonucleotides) to a large scale integrated circuit (e.g., solid phase particles having a

> transponder associated with each particle), and recording specific information (e.g., the sequence of the oligonucleotide) on the large scale integrated circuit (column 1, lines 55-column 2, line 6; column 17, lines 28-44).
>
> Regarding claim 1, Mandecki teaches a method for producing a labeled protein wherein the method comprises binding the protein to a large scale integrated [sic], and recording specific information on the large scale integrated circuit (Column 3, lines 1-27).
>
> Regarding claim 2, Mandecki teaches wherein the specific information is characteristic to the nucleic acid (e.g., the sequence of the oligonucleotide) bound to the LSI (column 1, lines 58-60).
>
> Regarding claim 3, Mandecki teaches a method wherein a substrate (e.g., monoisocyanate) mediates the binding of a nucleic acid to the large scale integrated circuit (column 8, lines 21-45).

(Office Action, pages 2-3). Applicants respectfully disagree.

The claims as amended are drawn to a method for producing a labeled gene or protein comprising binding the gene or protein to a large scale integrated circuit (LSI), wherein specific information characteristic of the gene or protein is recorded on the LSI. Mandecki fails to disclose a method of labeling a gene comprising binding the gene to a LSI. Mandecki indicates that several types of nucleic acid can be immobilized on a LSI, including DNA, RNA, and modifications thereof (column 3, lines 25-33), but does not mention the immobilization of genes, *e.g.*, hereditary units encoding a specific functional product (*i.e.*, a protein or RNA). All of the examples in Mandecki utilize short oligonucleotides. Thus, Mandecki fails to disclose the concept of labeling a gene by binding it to a LSI.

Mandecki does not disclose the labeling of a protein by binding the protein to a LSI. Mandecki mentions the use of a hapten such as biotin to derivatize an

oligonucleotide attached to a LSI for the purpose of detecting the binding of labeled DNA in a sandwich assay (column 3, lines 8-24). While technically the described steps result in a protein indirectly bound to a LSI, this disclosure does not teach the labeling of a protein as there is no disclosure of the concept of the LSI identifying the bound protein. Further, Mandecki does not disclose the recording on the LSI of specific information characteristic of the bound protein. The only recorded information used in Mandecki is the nucleotide sequence of the bound oligonucleotide.

Mandecki does not disclose each element of the claimed invention. Thus, Mandecki does not anticipate claims 1-3. It is respectfully requested that the rejection of claims 1-3 over Mandecki be withdrawn.

Claims 1 and 3-5 have been rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Gordon *et al.* (U.S. Patent No. 6,251,595). (Office Action, page 3). Applicants respectfully traverse this rejection.

The Examiner is of the opinion that:

> [r]egarding claim 1, Gordon et al teach a method for producing a labeled (e.g., electronically addressed, column 6, lines 15-17) nucleic acid, wherein the method comprises binding the nucleic acid (e.g., oligonucleotides) to a large scale integrated circuit (e.g., electrode assembly; column 18, lines 1-65; column 14, lines 36-49; Fig. 2), and recording specific information on the large scale integrated circuit (column 5, lines 19-22).
>
> Regarding claim 1, Gordon et al teach a method for producing a labeled (e.g., electronically addressed, column 6, lines 15-17) protein, wherein the method comprises binding the protein (e.g., enzymes, column 11, lines 51-60) to a large scale integrated circuit (e.g., electrode assembly; column 18, lines 1-65*; column 14, lines 36-49; Fig. 2), and recording specific information on the large scale integrated circuit (column 5, lines 19-22).

> Regarding claim 3, Gordon et al teach a method wherein a substrate (e.g., cellulosic materials and materials derived from cellulose) mediates the binding of a nucleic acid or protein to the large scale integrated circuit (column 9, lines 35-40).
>
> Regarding claim 4, Gordon et al teach a method wherein a cellulose vinyl acetate (e.g., cellulosic materials and materials derived from cellulose) mediates the binding of a nucleic acid or protein to the large scale integrated circuit (column 9, lines 35-40).
>
> Regarding claim 5, Gordon et al teach a method wherein an antibody bound to a protein mediates the binding of protein to the large scale integrated circuit (e.g., antigen-antibody, column 11, lines 51-63).

(Office Action, pages 3-4). Applicants respectfully disagree.

The claims as amended are drawn to a method for producing a labeled gene or protein comprising binding the gene or protein to a LSI, wherein specific information characteristic of the gene or protein is recorded on the LSI. Gordon *et al.* fail to disclose a method of labeling a gene comprising binding the gene to a LSI. Gordon *et al.* relates to methods for carrying out multiple chemical reactions (column 5, lines 13-56). Gordon *et al.* indicate that the disclosed method has particular application in the stepwise synthesis of oligonucleotides and the like (column 12, lines 4-6). Gordon *et al.* do not mention the immobilization or synthesis of genes, *e.g.*, hereditary units encoding a specific functional product (*i.e.*, a protein or RNA). Thus, Gordon *et al.* fail to disclose the concept of labeling a gene by binding it to a LSI.

Gordon *et al.* do not disclose the recording on the LSI of specific information characteristic of the bound gene or protein. The only disclosure of recording information is the sending of numerical data to storage means associated with each electrode on the LSI, enabling the changing of voltage at specific electrodes to attract or repel synthesis

reagents (column 5, lines 19-28). Gordon *et al.* do not disclose the use of the stored numerical data to record information related to a characteristic of the bound gene or protein.

Gordon *et al.* do not disclose each element of the claimed invention. Thus, Gordon *et al.* do not anticipate claims 1 and 3-5. It is respectfully requested that the rejection of claims 1 and 3-5 over Gordon *et al.* be withdrawn.

Conclusion

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

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